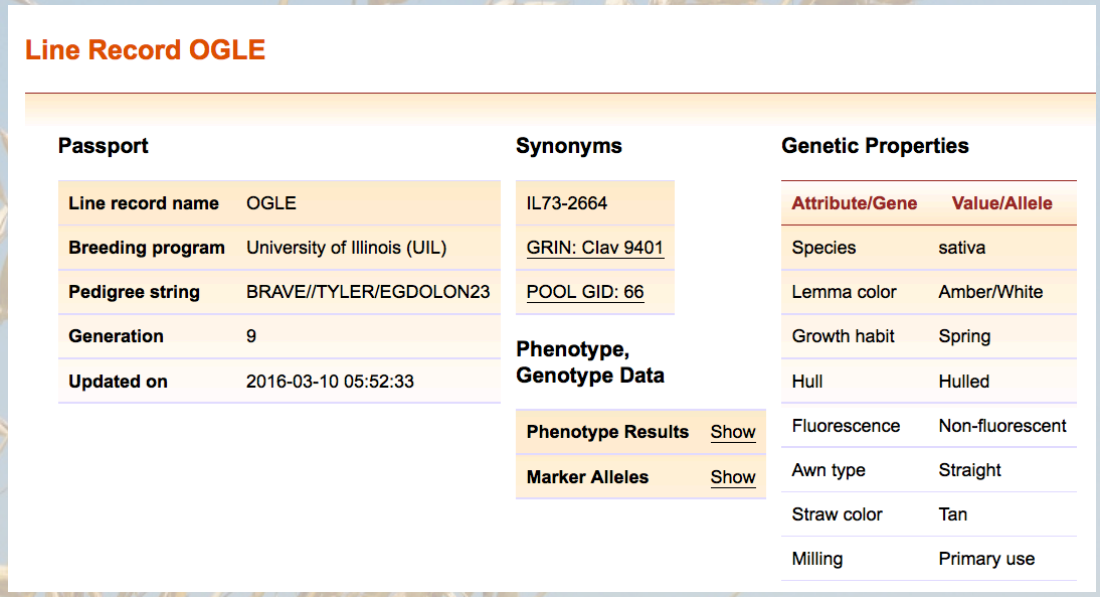
T3/Oat tutorials

Tutorial 1: Uploading germplasm information

https://triticeaetoolbox.org/oat/

T3 line records

- The line name is the unique identifier for a line record
- Required information: Line name, breeding program, filial generation and species
- Loading line information is the first step towards uploading phenotype and genotype data to T3/Oat



Line Record OGLE

Passport

Line record name	OGLE
Breeding program	University of Illinois (UIL)
Pedigree string	BRAVE//TYLER/EGDOLON23
Generation	9
Updated on	2016-03-10 05:52:33

Synonyms

IL73-2664
GRIN: Clav 9401
POOL GID: 66

Phenotype, Genotype Data

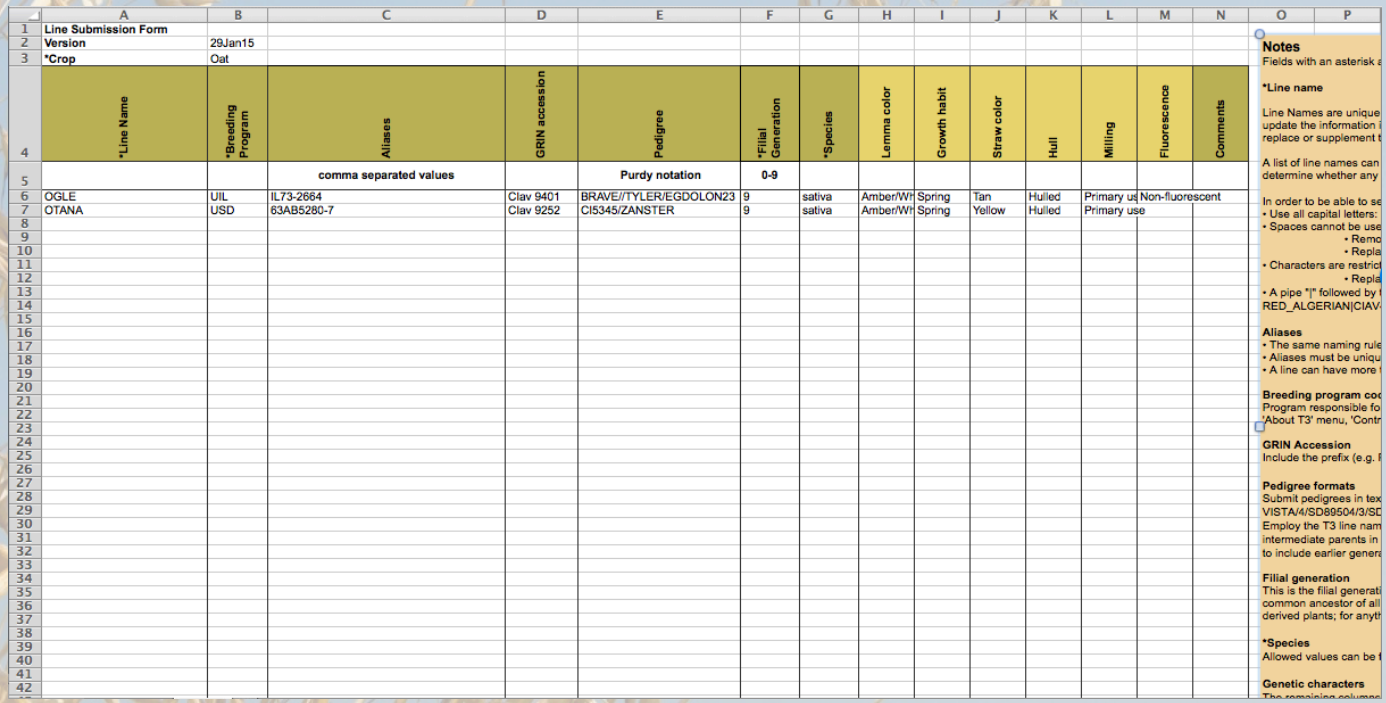
Phenotype Results	Show
Marker Alleles	Show

Genetic Properties

Attribute/Gene	Value/Allele
Species	sativa
Lemma color	Amber/White
Growth habit	Spring
Hull	Hulled
Fluorescence	Non-fluorescent
Awn type	Straight
Straw color	Tan
Milling	Primary use

T3/Oat line submission form

- Line information is submitted to T3 using the line submission form
- The template can be used to add new lines or to update the information held about existing T3 lines



	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	**Line Submission Form**													
2	**Version**	29Jan15												
3	***Crop**	Oat												
4	***Line Name**	***Breeding Program**	**Aliases**	**GRIN accession**	**Pedigree**	***Filial Generation**	***Species**	**Lemma color**	**Growth habit**	**Straw color**	**Hull**	**Milling**	**Fluorescence**	**Comments**
5			**comma separated values**		**Purdy notation**	**0-9**								
6	OGLE	UIL	IL73-2664	Clav 9401	BRAVE//TYLER/EGDOLON23	9	sativa	Amber/Wh	Spring	Tan	Hulled	Primary us	Non-fluorescent	
7	OTANA	USD	63AB5280-7	Clav 9252	CI5345/ZANSTER	9	sativa	Amber/Wh	Spring	Yellow	Hulled	Primary use		

Notes

Fields with an asterisk

***Line name**

Line Names are unique
update the information
replace or supplement

A list of line names can
determine whether any

In order to be able to se
• Use all capital letters:
• Spaces cannot be use
• Remo
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• Characters are restrict
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• A pipe "|" followed by
RED_ALGERIAN|CIAV

Aliases
• The same naming rule
• Aliases must be uniqu
• A line can have more

Breeding program co
Program responsible fo
'About T3' menu, 'Contr

GRIN Accession
Include the prefix (e.g.

Pedigree formats
Submit pedigrees in tex
VISTA/4/SD89504/3/SD
Employ the T3 line nam
intermediate parents in
to include earlier gener

Filial generation
This is the filial generati
common ancestor of all
derived plants; for anyth

***Species**
Allowed values can be

Genetic characters

Tutorial 1: Outline

1. Line nomenclature
2. Search existing line records in T3/Oat
3. The line submission template
    1. Downloading the template
    2. Completing the template
4. Uploading the template
    1. Test loading the template
    2. Submitting the template

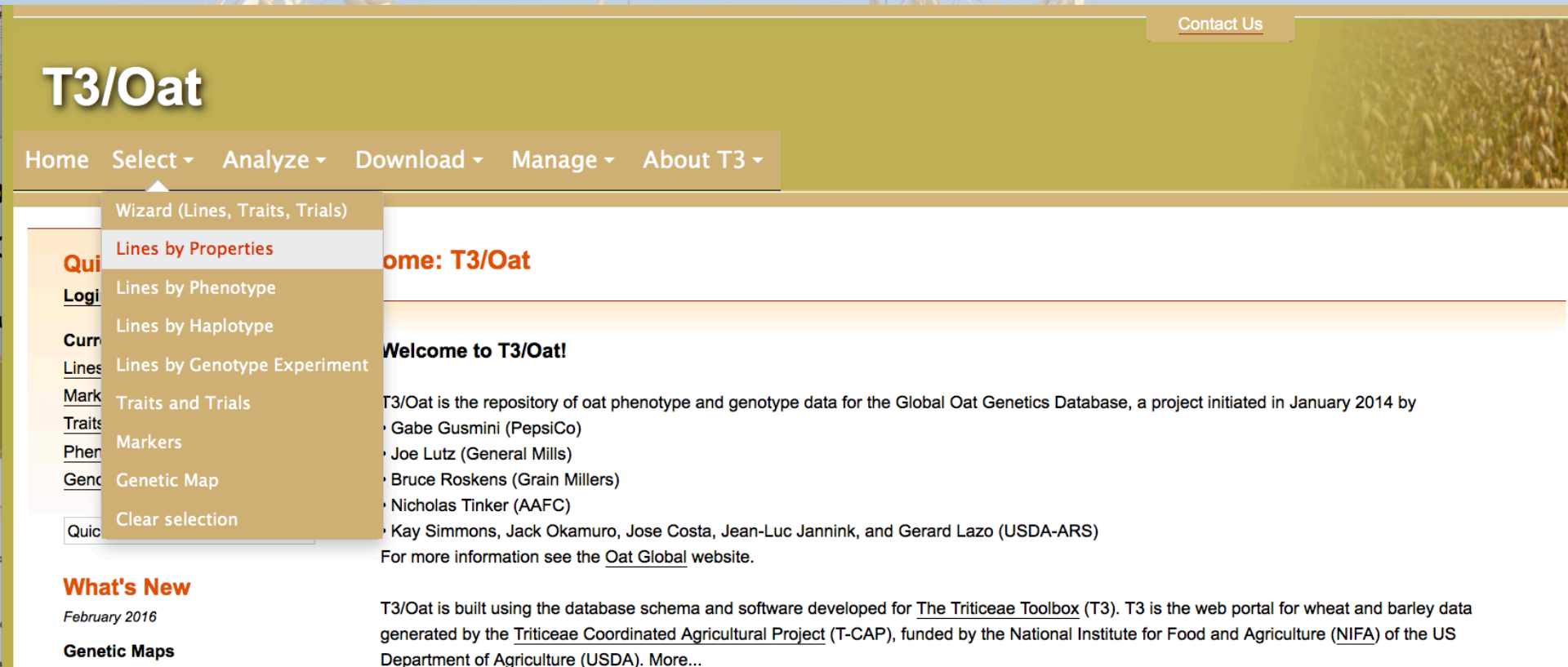
Section 1: Line nomenclature

Rule	Example
1. Capital letters only	Leggett ➔ LEGGETT
2. No spaces: replace spaces between two letters with an underscore "_" and remove spaces that separate a letter from a number.	AC Assiniboia ➔ AC_ASSINIBOIA
	Clintland 60 ➔ CLINTLAND60
3. Characters are restricted to letters, numbers, underscores and dashes: remove special characters or replace with an underscore "_" if separation is required to maintain meaning.	Dippes Überwinder ➔ DIPPES_UBERWINDER
	24-30-B/69 ➔ 24-30-B69
4. Line names must be unique: a pipe "|" and the GRIN accession of the line can be used to differentiate lines with the same common name.	RED_ALGERIAN|CIAV4635

- Format line names according to the rules outlined above
- Now use the formatted list to search existing T3/Oat line records

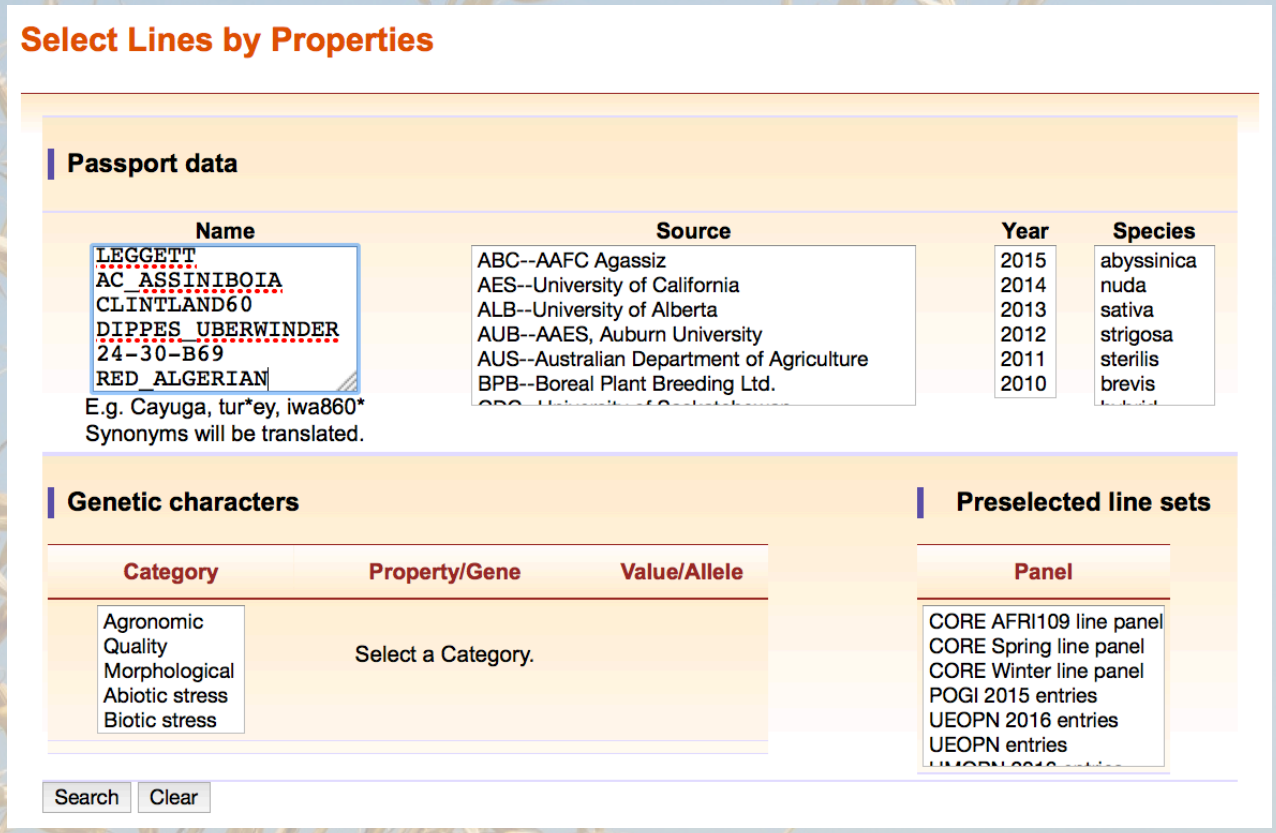
Section 2: Searching existing line records in T3/Oat

- Navigate to the T3/Oat homepage at https://triticeaetoolbox.org/oat/
- Choose the Select menu> Lines by Properties

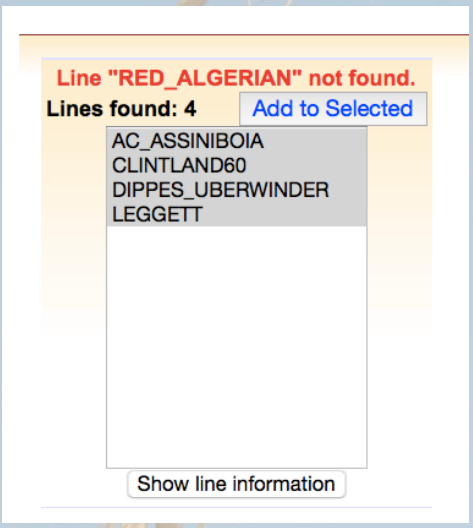


Section 2: Searching existing line records in T3/Oat

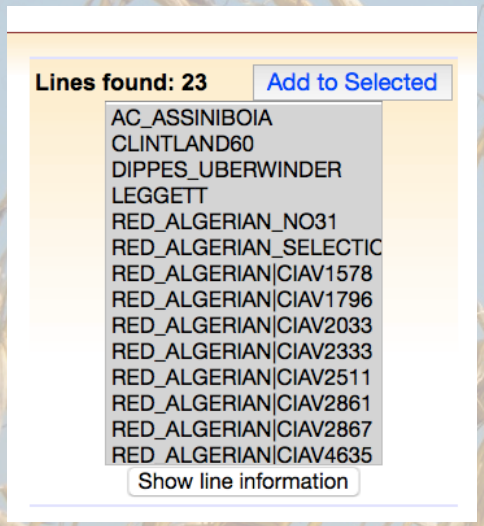
Copy and paste (or type) a list of line names into the “Name” box and click “Search”



Section 2: Searching existing line records in T3/Oat



- Line names that are already in the database will appear in the results box
- Click “Show line information” to view the existing information for these T3 lines
- Please contact the curator if you have any hesitations about combining your data with that of an existing T3 line of the same name

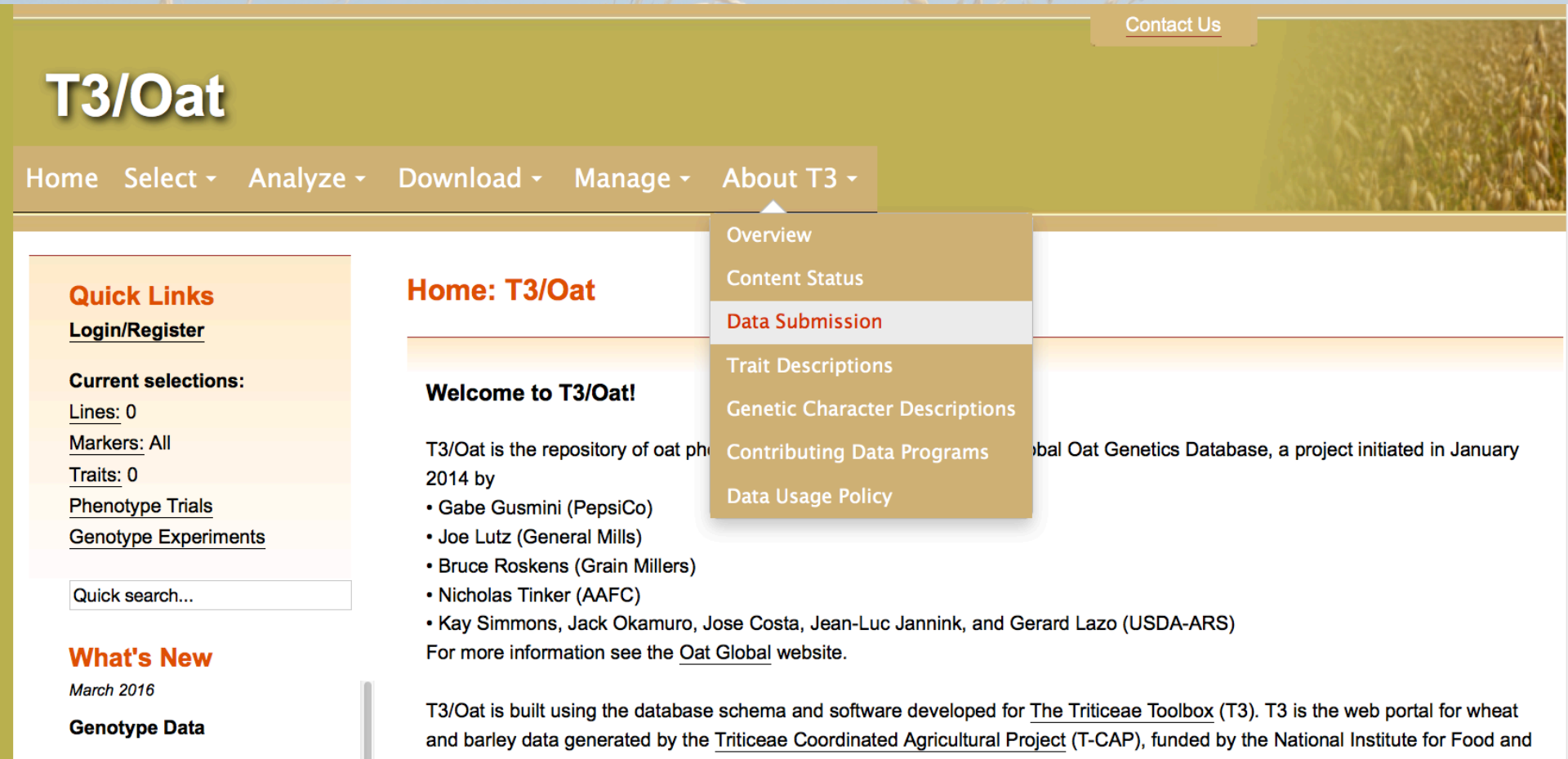


- An asterisk “*” can be used as a wildcard to find similar names

  e.g. RED_ALGERIAN*
- Line aliases will be converted to T3 primary names in the results box
- Line names that are not in T3/Oat should be added using the Line submission template

Section 3.1: Downloading the template

Choose the About T3 menu> Data Submission



Section 3.1: Downloading the template

Select the “Oat” line template from the list to download the Excel template

Data Templates

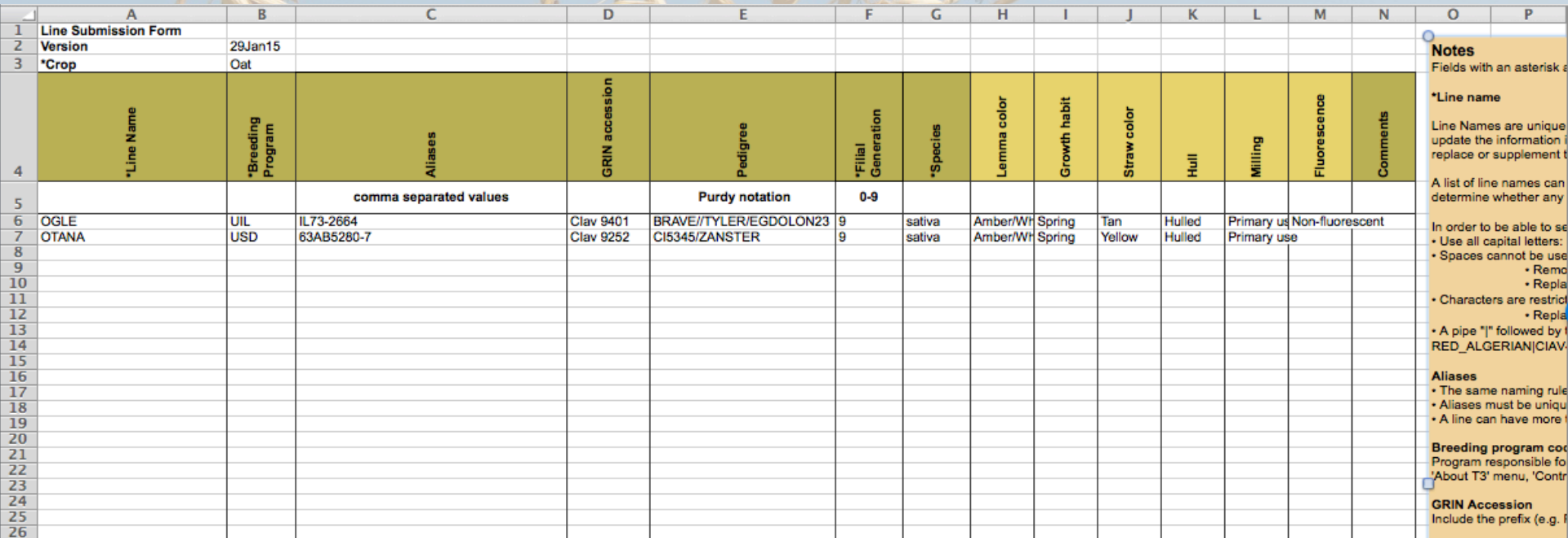
Topic	Link	Version	Contents
Germplasm Lines	Oat	29Jan15	Name, synonyms, pedigree for oat
	Genetic Characters	12Dec13	Genes, QTLs, trait-linked markers, market class
	Name conversion macros	24Sep11	Excel spreadsheet to convert germplasm names to T3 formatted names.
Phenotyping	Traits	16Sep11	Please discuss with the curators before adding a new trait.
	Trial description	04Dec12	Location, planting date, experimental design...
	Trial means	03Dec15	Values for all traits for test lines and checks, summary statistics
	Plot-Level Results	22Jul13	Trait values for each plot
	Fieldbook	07Apr14	Field map
Canopy Spectral Reflectance	CSR System	28Mar13	Instrument annotation

Section 3.2: Completing the template

The notes section contains nearly all of the information needed to fill out the line submission template, apart from:

- Breeding program codes
- Line properties (pale green headings)

This information can be found under the “About T3” menu



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2	Version	29Jan15												
3	*Crop	Oat												
4	*Line Name	*Breeding Program	Aliases	GRIN accession	Pedigree	*Filial Generation	*Species	Lemma color	Growth habit	Straw color	Hull	Milling	Fluorescence	Comments
5			comma separated values		Purdy notation	0-9								
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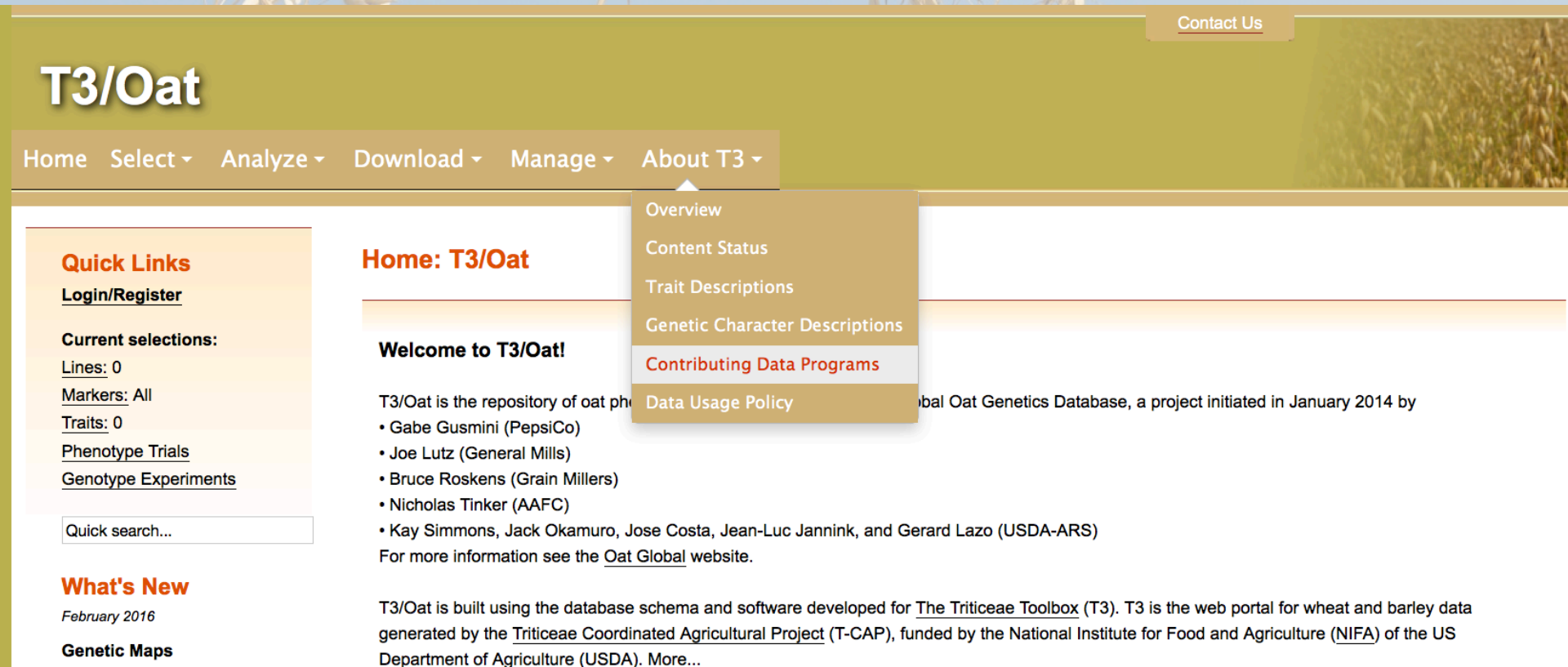
Breeding program co
Program responsible fo
'About T3' menu, 'Contr

GRIN Accession
Include the prefix (e.g.

Section 3.2: Completing the template

To find the breeding program code

- Choose the About T3 menu> Contributing Data Programs



Section 3.2: Completing the template

- The 3-letter breeding program code can be found in the first table on this page
- Contact the curator if you do not find an appropriate code

Contributing Programs

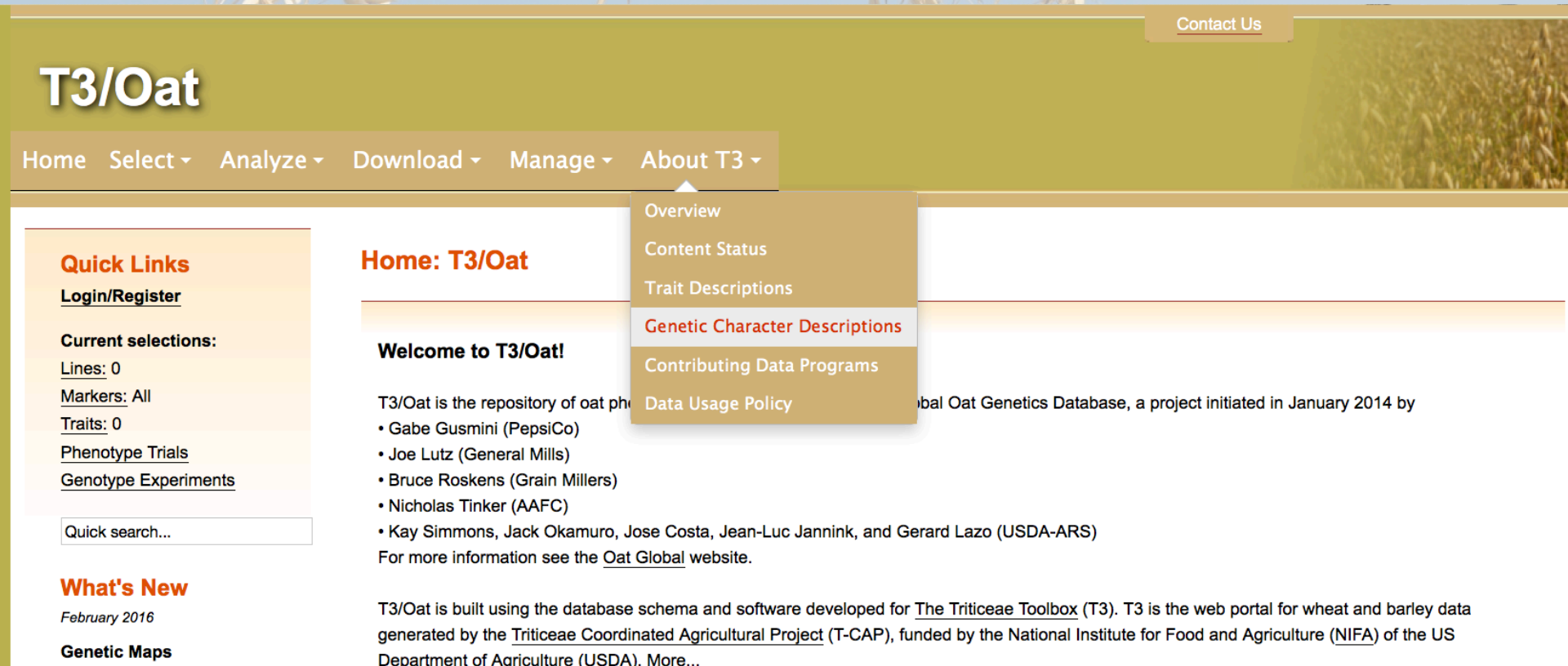
Breeding programs contribute lines.

Breeding Program	Code	Collaborator	Description	Institution
AAES, Auburn University	AUB	Kathryn Glass	Alabama Agricultural Experiment Station (AAES), Auburn University, AL-USA.	Auburn University
AAFC Agassiz	ABC		Agriculture and Agri-Food Canada (AAFC) Pacific Agri-Food Research Centre (PARC) in Agassiz, BC-CAN.	Agriculture and Agri-Food Canada
AAFC Brandon	MTB	Jennifer W. Mitchell-Fetch	Agriculture and Agri-Food Canada (AAFC) Brandon Research Centre, MB-CAN.	Agriculture and Agri-Food Canada
AAFC Lacombe	LAC	Jennifer W. Mitchell-Fetch	Agriculture and Agri-Food Canada (AAFC) Lacombe Research Centre, AB-CAN.	Agriculture and Agri-Food Canada
AAFC Ottawa	OTW	Weikai Yan	Agriculture and Agri-Food Canada (AAFC) Eastern Cereal and Oilseed Research Centre (ECORC) in Ottawa, ON-CAN.	Agriculture and Agri-Food Canada
AAFC Sainte-Foy	STF		Agriculture and Agri-Food Canada (AAFC) Soils and Crops Research and Development Centre (SCRDC) in Quebec	Agriculture and Agri-Food

Section 3.2: Completing the template

To find the values for loading additional line properties

- Choose the About T3 menu> Genetic Character Descriptions



Section 3.2: Completing the template

- Use the values in the first column as headings in the template
- Use one of the values in the third column to provide line information

Property Descriptions

Agronomic	Description	Values
Growth habit	Vernalization requirement	Spring,Winter,Facultative,Mixed
Species	Avena species	abyssinica,nuda,sativa,strigosa,sterilis,brevis,hybrid,unknown,fatua,wiestii,maroccana,hybrida,longiglumis,vaviloviana,barbata,byzantina
Biotic stress	**Description**	**Values**
Pc-14	Dominant gene conferring resistance to crown rust (Puccinia coronata) race 202.	Present,Absent,Heterozygous
Pc-2	Partially dominant gene conferring resistance to crown rust (Puccinia coronata) race 1. The gene is pleiotropic or closely linked with Hv-1.	Present,Absent,Heterozygous
Pc-38	Gene conferring resistance to crown rust (Puccinia coronata) races 264, 290, 295, 332 and 446 in Avena sterilis CW491-4. Susceptible to race 202.	Present,Absent,Heterozygous
Pc-39	Dominant gene conferring resistance to crown rust (Puccinia coronata) races 264, 290, 295, 332 and 446 in Avena sterilis F366. The gene is allelic or closely linked to Pc-55.	Present,Absent,Heterozygous
Pc-45	Dominant gene conferring resistance to crown rust (Puccinia coronata) races 239, 264, 290, 326, 330 and 332 in Avena sterilis F-169.	Present,Absent,Heterozygous
Pc-58	Gene conferring resistance to crown rust (Puccinia coronata) race 264B, among other races of crown rust. The gene was derived from Avena sterilis PI 295919 (CI 8387).	Present,Absent,Heterozygous

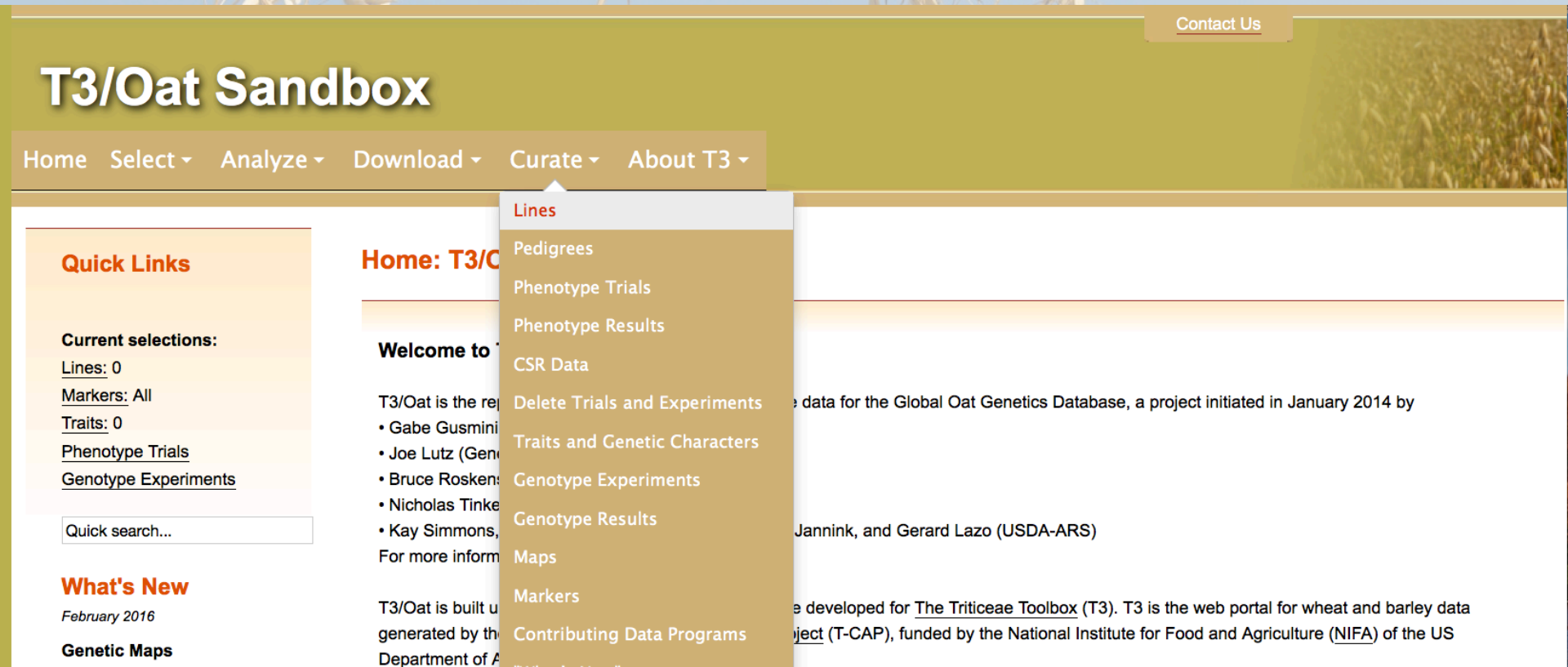
Section 3.2: Completing the template

- You can add and remove columns in the pale green section
- Line properties are not required fields and so the corresponding cells can be left blank

E	F	G	H	I	J	K	L	M	N
Pedigree	*Filial Generation	*Species	Lemma color	Growth habit	Straw color	Hull	Milling	Fluorescence	Comments
Purdy notation	**0-9**								
BRAVE//TYLER/EGDOLON23	9	sativa	Amber/Wh	Spring	Tan	Hulled	Primary us	Non-fluorescent	
CI5345/ZANSTER	9	sativa	Amber/Wh	Spring	Yellow	Hulled	Primary use		

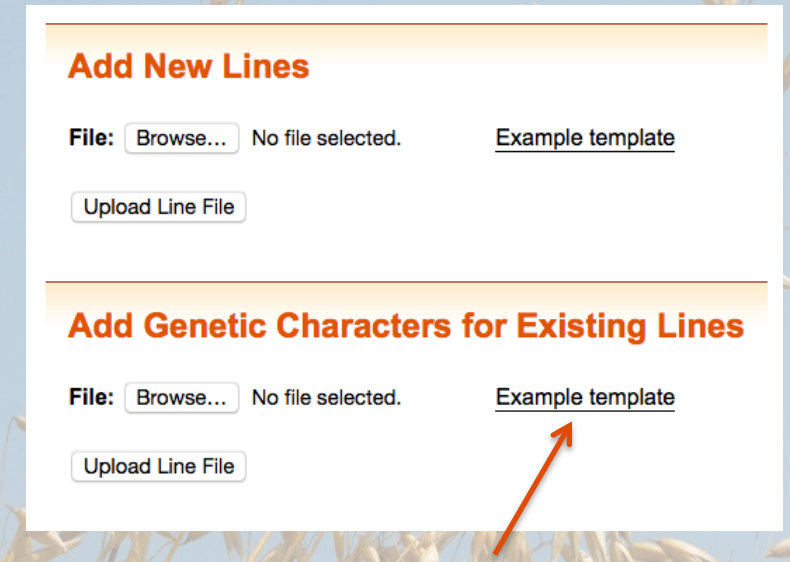
Section 4.1: Test loading the template

- Navigate to the Oat Sandbox at https://t3sandbox.org/t3/sandbox/oat/
- The curation menu will appear once you register and login
- Choose the Curate menu> Lines



Section 4.1: Test loading the template

The sandbox allows you to test load your template. The Oat Sandbox reverts to an exact copy of T3/Oat overnight.



An additional template allows you to add genetic characters/ line properties to existing T3 lines

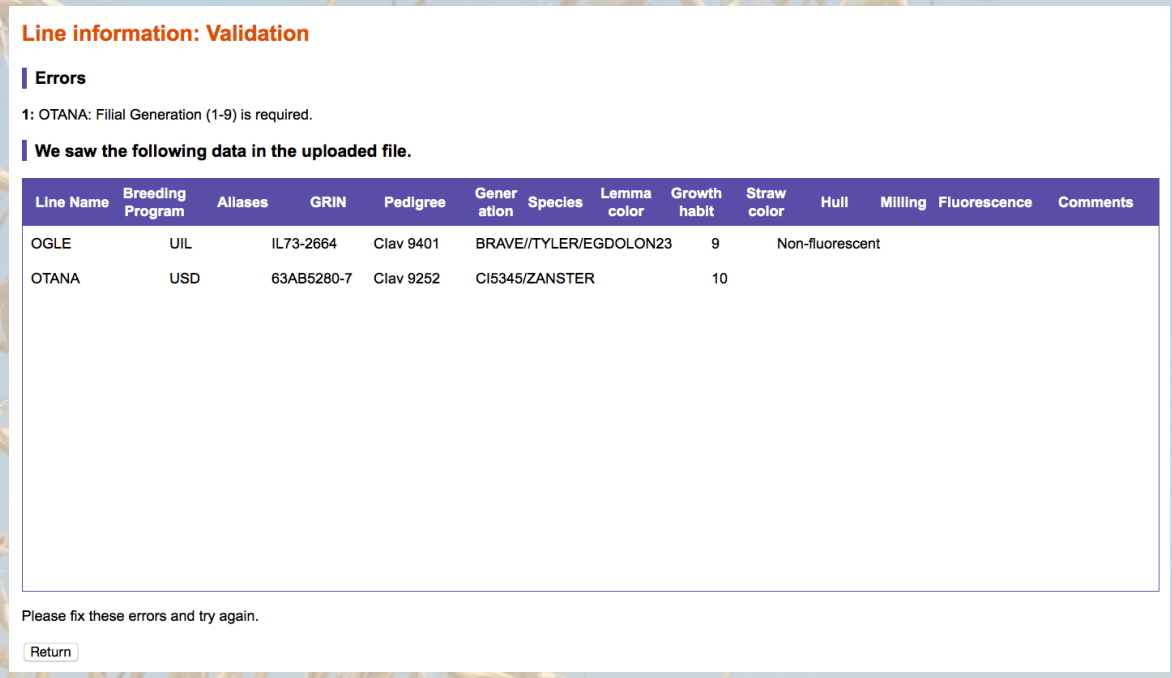
- The only required field is the T3 line name
- The template can also be downloaded from the Data Submission page

Section 4.1: Test loading the template

- T3 will highlight illegal entries in your uploaded line file

  e.g. Filial generation cannot exceed 9

- The window shows how T3 has read the upload file. Please take the time to validate that your data appears there correctly.



Line information: Validation

Errors

1: OTANA: Filial Generation (1-9) is required.

We saw the following data in the uploaded file.

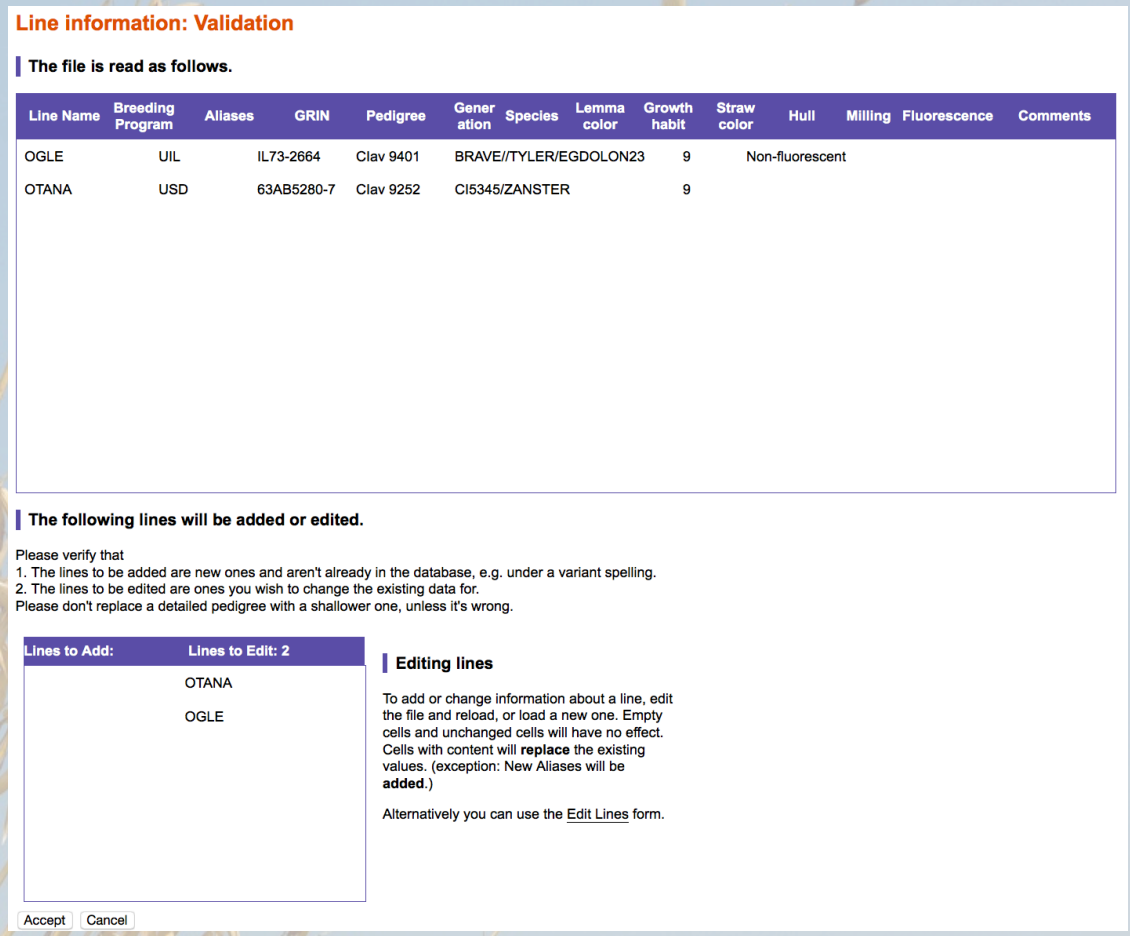
Line Name	Breeding Program	Aliases	GRIN	Pedigree	Generation	Species	Lemma color	Growth habit	Straw color	Hull	Milling	Fluorescence	Comments
OGLE	UIL		IL73-2664	Clav 9401	BRAVE//TYLER/EGDOLON23			9		Non-fluorescent			
OTANA	USD		63AB5280-7	Clav 9252	CI5345/ZANSTER			10					

Please fix these errors and try again.

Return

Section 4.1: Test loading the template

- A second box will appear when there are no illegal entries in the uploaded document
- The lower box separates the uploaded lines into new lines and existing T3 lines
- Don’t forget to “Accept” the upload if the information is correct



Line information: Validation

The file is read as follows.

Line Name	Breeding Program	Aliases	GRIN	Pedigree	Generation	Species	Lemma color	Growth habit	Straw color	Hull	Milling	Fluorescence	Comments
OGLE	UIL		IL73-2664	Clav 9401	BRAVE//TYLER/EGDOLON23			9		Non-fluorescent			
OTANA	USD		63AB5280-7	Clav 9252	CI5345/ZANSTER			9					

The following lines will be added or edited.

Please verify that
1. The lines to be added are new ones and aren't already in the database, e.g. under a variant spelling.
2. The lines to be edited are ones you wish to change the existing data for.
Please don't replace a detailed pedigree with a shallower one, unless it's wrong.

Lines to Add:	Lines to Edit: 2
	OTANA
	OGLE

Editing lines

To add or change information about a line, edit the file and reload, or load a new one. Empty cells and unchanged cells will have no effect. Cells with content will **replace** the existing values. (exception: New Aliases will be **added**.)

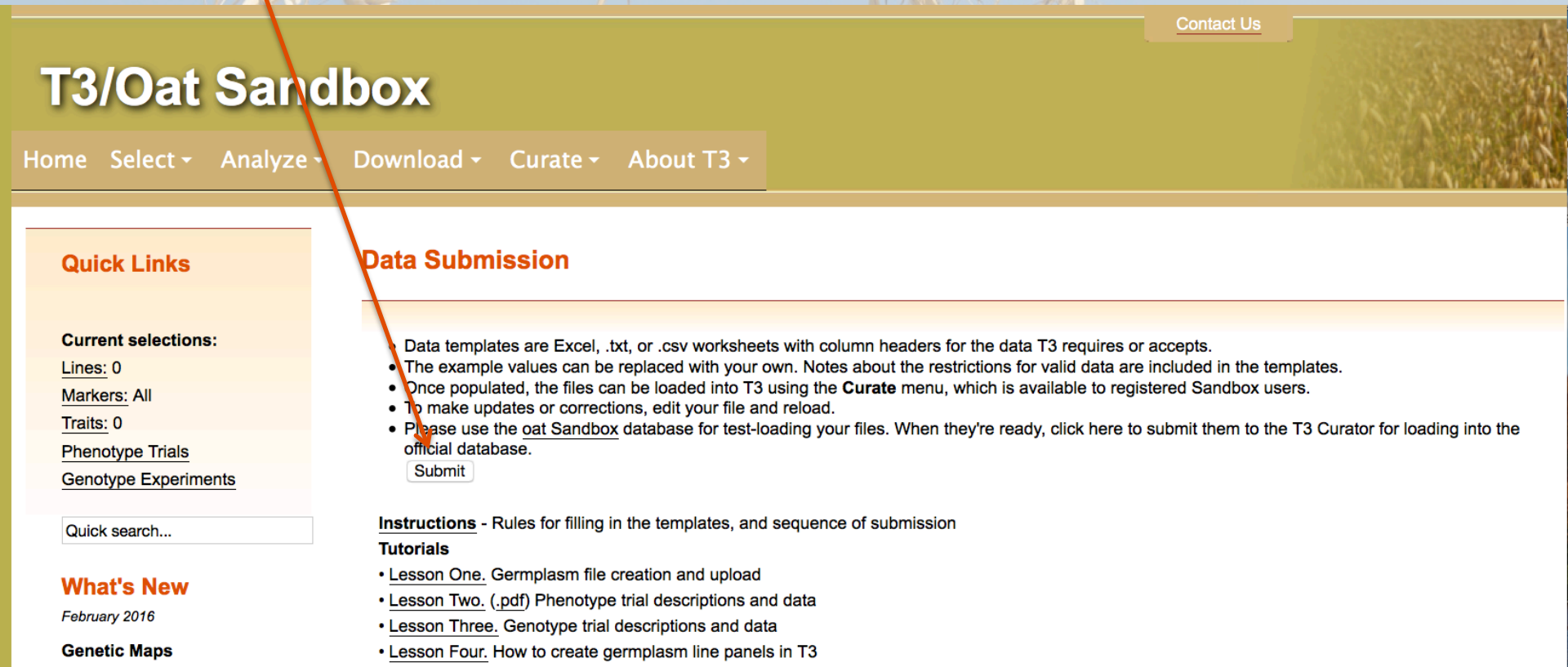
Alternatively you can use the Edit Lines form.

Accept Cancel

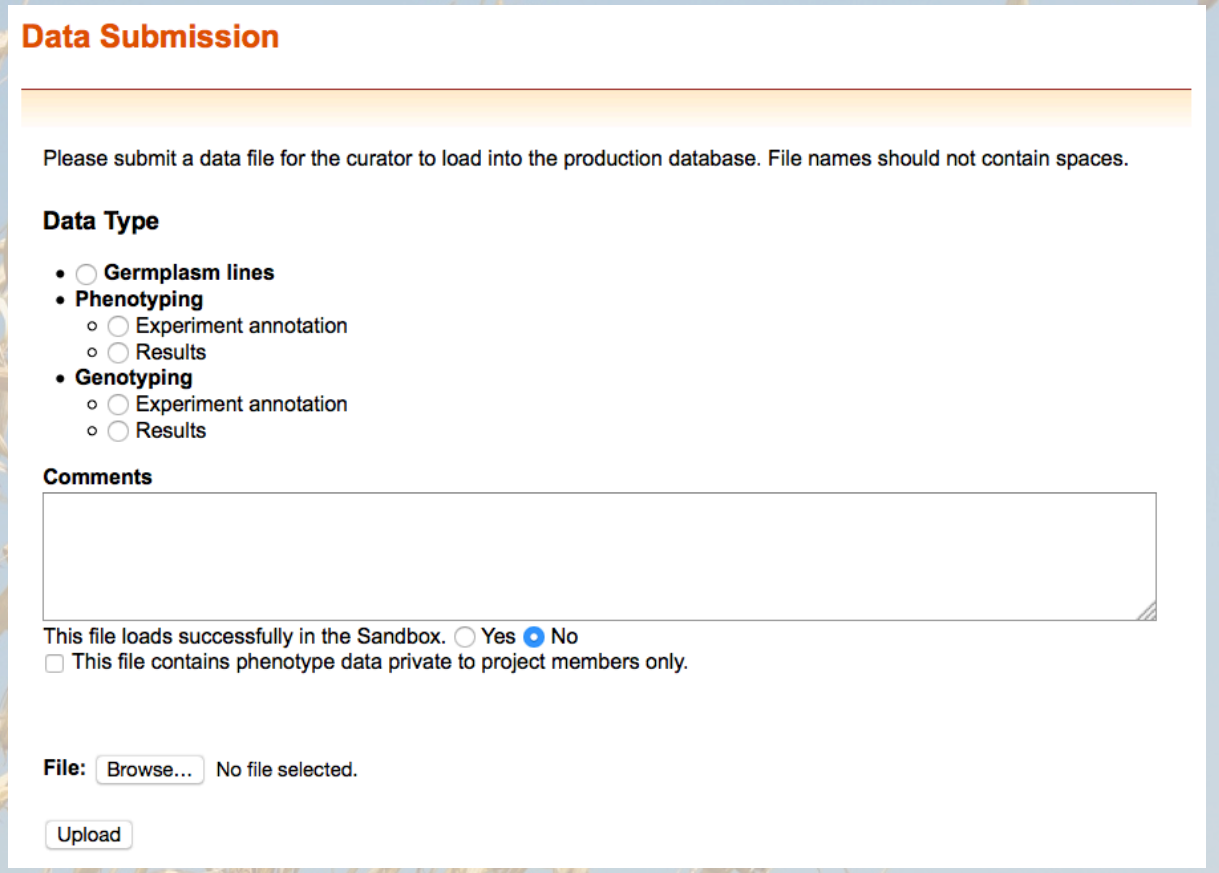
Section 4.1: Submitting the template

Finally, submit the document to the curator for upload to T3/Oat

- Navigate to the Data Submission page
- Click the “Submit” button



Section 4.1: Submitting the template



You can submit files that do not successfully upload to the Oat Sandbox to receive help from the curator

Contact Us

Please contact us if you need help using T3/Oat